

Complete situs inversus – is it a contraindication for organ donation?

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ABSTRACT

Complete situs inversus, (SI), the total transposition of thoracic and abdominal organs, is rare and is considered a contraindication for organ donation. We report a patient of complete SI, who underwent donor nephrectomy. A 21-year-old male, without significant medical history, presented for voluntary living-unrelated renal donation and was found to have complete SI on evaluation and underwent right donor nephrectomy. The recipient is doing well on the follow-up. Meticulous surgical planning while selecting kidneys would enable renal donation even in cases of complete SI.

INTRODUCTION

Complete situs inversus (SI), defined as the total transposition of the thoracic and abdominal organs, is rare.^[1,2] It has been widely believed that SI should be considered an absolute contraindication for organ donation, especially in cases of liver and heart transplantation, where lateralization would alter operative planning and technique.^[2,3] Although various anatomic anomalies have a higher incidence in these patients, the kidneys are rarely involved. As there is an unmet need for organ donation worldwide, minor anatomic variations should not be considered a contraindication while selecting patients for donor nephrectomy. We present the case a patient with SI who underwent live-unrelated donor nephrectomy.

CASE REPORT

A 21-year-old male without significant medical history presented for voluntary living-unrelated renal donation. As a part of donor workup, a computed tomography angiogram of the abdomen was performed,


which revealed complete SI of the heart and abdominal organs including the great vessels [Figures 1 and 2]. After thorough preoperative planning, right donor nephrectomy was performed as the right renal vein was longer. A short right renal artery was anticipated. However, during the surgery, no other anomalies which could have made the donor nephrectomy difficult were observed. The recipient is doing well at 4 years of follow-up.

DISCUSSION

Only a few reports on renal donation in patients with complete SI are available. Polak *et al.* described a case in 2006, where both kidneys were procured from a deceased donor and transplanted into two different recipients.^[3] Proper preoperative planning would enable the urologist to harvest a kidney from living donors with SI and achieve good results.

CONCLUSIONS

Live renal transplantation is feasible between donors with complete SI and recipient with normal lateralization. In

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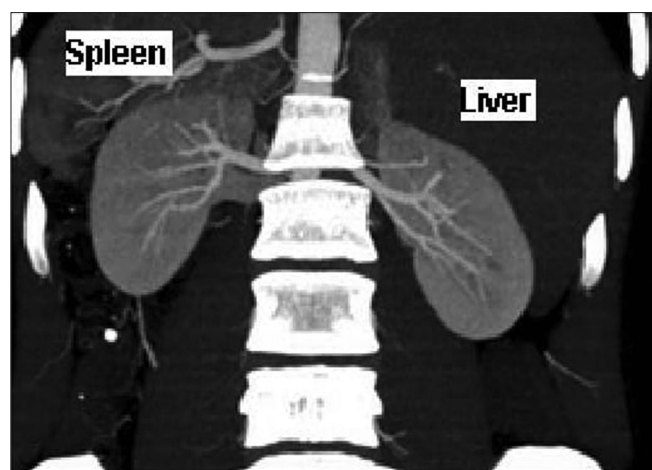


Figure 1: In this computed tomography image, the liver is on the left side and spleen is on the right side suggestive of complete situs inversus

pure SI, there is a reversion in anatomical positions of all the viscera (mirror image) without concomitant anomalies. This report highlights the rarity of renal donation in patients with SI in the literature, the importance of identifying such conditions and proper counseling of the patient before surgery and that SI should not be a contraindication for renal transplantation.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

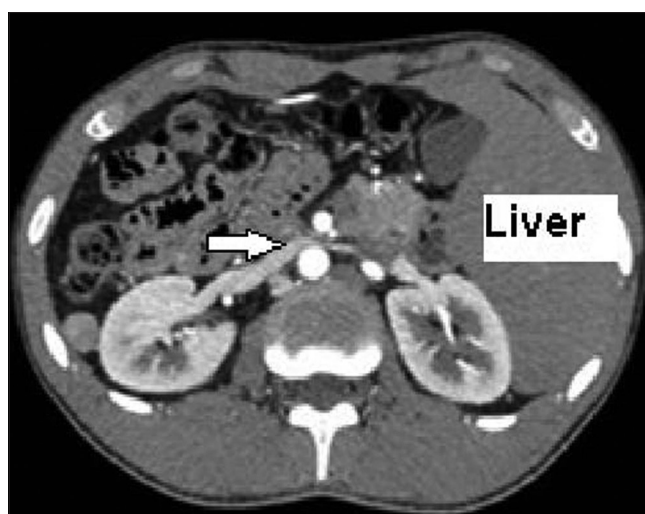


Figure 2: In this cross- sectional computed tomography image, the right renal vein is longer and complete transposition of abdominal organs including great vessels is appreciated

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